What Is Claimed Is:

1. A hybrid component for lightweight, structural uses, comprising:

a steel member formed of a high strength steel; and

a cast coupling member cast on a portion of said steel member by casting-in-place a semi-solid aluminum about said portion of said steel member, thereby positively and rigidly securing said coupling member to said steel member.

2. A hybrid component according to claim 1, wherein

said steel member has a yield strength of at least about 1300 MPa, and said cast coupling has a yield strength of at least about 180 MPa.

3. A hybrid component according to claim 1, wherein

said steel member is a tubular member.

4. A hybrid component according to claim 1, wherein

said portion of said steel member on which said coupling member is cast is an end portion of said tubular member.

5. A hybrid component according to claim 4, wherein

said end portion includes bent sections extending outwardly away from said steel member.

6. A hybrid component according to claim 4, wherein

said end portion includes a section having a non-circular cross-section.

7. A hybrid component according to claim 1, wherein

said portion of said steel member on which said coupling member is cast is a mid portion of said tubular member.

8. A hybrid component according to claim 7, wherein

said mid portion includes a section having a non-circular cross-section.

9. An engine cradle for a motor vehicle, comprising:

a frame assembly having a pair spaced rails secured by spaced cross members;

at least one of said spaced rails and said spaced cross members including

a hybrid component, including:

a steel member formed of a high strength steel; and

a cast coupling member cast on a portion of said steel member by casting-in-place a semi-solid aluminum about said portion of said steel member, thereby positively and rigidly securing said coupling member to said steel member.

10. An engine cradle according to claim 9, wherein

said steel member has a yield strength of at least about 1300 MPa, and said cast coupling has a yield strength of at least about 180 MPa.

11. An engine cradle according to claim 10, wherein

said steel member is a tubular member.

12. A control arm for a motor vehicle, comprising:

a hybrid component including:

a steel member formed of a high strength steel and curved in a longitudinal direction; and

cast coupling members cast on said steel member, each of said coupling members being cast on a portion of said steel member by casting-in-place a semi-solid aluminum about said portion of said steel member, thereby positively and rigidly securing said coupling member to said steel member.

13. A control arm according to claim 12, wherein

said steel member has a yield strength of at least about 1300 MPa, and each of said cast couplings has a yield strength of at least about 180 MPa.

14. A control arm according to claim 13, wherein

said steel member is a tubular member.

15. An instrument panel support structure for a motor vehicle, comprising:

a hybrid component in the form of a cross beam; and

a mount positioned on each end of said hybrid component,

said hybrid component including:

a steel member formed of a high strength steel; and

a cast coupling member cast said steel member, said coupling member being cast on a portion of said steel member by casting-in-place a semi-solid aluminum about said portion of said steel member, thereby positively and rigidly securing said coupling member to said steel member, said cast coupling member including a plurality of spaced brackets.

16. An instrument panel support structure according to claim 15, wherein said steel member has a yield strength of at least about 1300 MPa, and said cast coupling has a yield strength of at least about 180 MPa.

17. An instrument panel support structure according to claim 16, wherein said steel member is a tubular member.

18. A bumper assembly for a motor vehicle, comprising:

a hybrid component including:

a steel member formed of a high strength steel; and

cast coupling members cast on said steel member, each of said coupling members being cast on a portion of said steel member by casting-in-place a semi-solid aluminum about said portion of said steel member, thereby positively and rigidly securing said coupling members to said steel member,

said steel member forming a longitudinally extending steel bumper member constructed to protect the vehicle from impact, and said coupling members forming first and second aluminum members attached to said steel bumper member, wherein said steel bumper member extends between said first and second aluminum members and said first and second aluminum members are positioned between said steel bumper member and the space frame of the vehicle.

19. A bumper assembly according to claim 18, wherein said steel member has a yield strength of at least about 1300 MPa, and each of said cast couplings has a yield strength of at least about 180 MPa.

20. A bumper assembly according to claim 19, wherein said steel member is a tubular member.

21. A method of forming a hybrid component for lightweight, structural uses, comprising:

forming a steel member formed of a high strength steel into a predetermined configuration; and

casting a coupling member on a portion of the steel member by casting-in-place a semi-solid aluminum about the portion of the steel member, thereby positively and rigidly securing the coupling member to the steel member.

22. A method according to claim 21, wherein

forming the steel member includes forming the steel member to have a yield strength of at least about 1300 MPa, and

casting the cast coupling includes forming the aluminum to have a yield strength of at least about 180 MPa.

23. A method according to claim 22, wherein

forming the steel member includes forming the steel member as a tubular member.

24. A method according to claim 22, further comprising:

heat treating the hybrid component to an elevated temperature.

25. A method according to claim 24, wherein,

the heat treating the hybrid component to an elevated temperature includes heat treating the hybrid component to approximately 440 degrees.